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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/735,547  | 12/14/2000  | Seok Moon Kang       | HI-024              | 6563             |
| 34610   | 7590        | 10/05/2005           | EXAMINER            |                  |
| FLESHNER & KIM, LLP<br>P.O. BOX 221200<br>CHANTILLY, VA 20153 |             |                      | LE, NHAN T          |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 2685                |                  |

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/735,547

Applicant(s)

KANG, SEOK MOON

Examiner

Nhan T. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 and 27-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7 and 14-23 is/are allowed.
- 6) ☒ Claim(s) 8,9 and 27-31 is/are rejected.
- 7) ☒ Claim(s) 10-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/25/05 has been entered.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 8, 9, 27-29, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Bradley (US 6,157,183).

As to claim 8, Applicant's admitted prior art teaches a code division multiple access (CDMA) base station system, comprising: a transmitter configured to modulate and transmit a first signal through a first antenna, the first signal passing through a transmission band filter (see fig. 1, numbers 104,106, 108, page 3, lines 5-7); a receiver configured to receive and demodulate a second signal through a second antenna, the second signal being converted to a frequency band by a receiving frequency converter (see fig. 1, numbers 105, 107, 109, page 3, lines 8-14). Applicant's admitted prior art fails to teach a radio frequency (RF) characteristic analyzer coupled to monitor and

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analyze an output signal of each of the transmitter and receiver and determine an extent of signal degradation, and to provide a monitoring signal based on the level of degradation, wherein the RF characteristic analyzer is coupled to the frequency band filter and the receiving frequency converter and includes transmission and reception band rejection filters to respectively filter out unwanted signals outputs from the frequency band filter and the receiving frequency converter and the RF characteristic analyzer determines whether the unwanted signals are increasing or decreasing.

Bradley teaches a transceiver testing unit (see col. 2, lines 39-49) wherein the transceiver testing unit performs a test to verify transmitter and receiver links and to evaluate signal strength and quality (see col. 3, lines 29-53) wherein the RF characteristic analyzer is coupled to the frequency band filter and the receiving frequency converter and includes transmission and reception band rejection filters to respectively filter out unwanted signals outputs from the frequency band filter and the receiving frequency converter and the RF characteristic analyzer determines whether the unwanted signals are increasing or decreasing (see col. 2, lines 50-59, col. 3, lines 29-53). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Bradley into the system of Applicant's admitted prior art in order to perform signal strength and quality testing.

As to claim 9, the combination of applicant's admitted prior art and Bradley teaches the RF characteristic analyzer comprises: a first analyzing circuit coupled to monitor and analyze an output signal of the transmitter in real time (see Bradley col. 3, lines 30-45); a second analyzing circuit coupled to monitor and analyze an output signal

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of the receiver in real time (see Bradley col. 3, lines 46-53); an alarm circuit coupled to receive analyzed data from the first and second analyzing circuits, and generating the monitoring signal (see Bradley col. 3, lines 46-53).

As to claim 27, Applicant's admitted prior art teaches a base station comprising a transceiver, configured to modulate and transmit a first signal through a first antenna and configured to receive and demodulate a second signal through a second antenna. Applicant's admitted prior art fails to teach a radio frequency (RF) characteristic analyzer coupled to monitor and analyze an output signal of each of the transmitter and receiver and determine an extent of signal degradation, and to provide a monitoring signal based on the level of degradation, wherein the RF characteristic analyzer is coupled to the frequency band filter and the receiving frequency converter and includes transmission and reception band rejection filters to respectively filter out unwanted signals outputs from the frequency band filter and the receiving frequency converter and the RF characteristic analyzer determines whether the unwanted signals are increasing or decreasing and alarm circuit configured to generate a least one alarm if the RF characteristic analyzer determines the call quality is going to be deteriorate. Bradley teaches a transceiver testing unit (see col. 2, lines 39-49) wherein the transceiver testing unit performs a test to verify transmitter and receiver links and to evaluate signal strength and quality (see col. 3, lines 29-53) wherein the RF characteristic analyzer is coupled to the frequency band filter and the receiving frequency converter and includes transmission and reception band rejection filters to respectively filter out unwanted signals outputs from the frequency band filter and the receiving frequency converter and

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the RF characteristic analyzer determines whether the unwanted signals are increasing or decreasing (see col. 2, lines 50-59, col. 3, lines 29-53), an alarm circuit coupled to receive analyzed data from the first and second analyzing circuits, and generating the monitoring signal (see Bradley col. 3, lines 46-53). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Bradley into the system of Applicant's admitted prior art in order to perform signal strength and quality testing.

As to claim 28, the combination of applicant's admitted prior art and Bradley teaches wherein the RF characteristic analyzer determines the call quality is going to deteriorate by analyzing RF characteristics of the transmission frequency band filter and the receiving frequency converter (see Bradley col. 3, lines 29-53).

As to claim 29, the combination of applicant's admitted prior art and Bradley teaches wherein the RF characteristic analyzer analyzes the unwanted signal that includes an out of band transmitted by the base station (see Bradley col. 7, lines 14-35).

As to claim 31, the claim is rejected as to claim 27 above.

2. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Bradley (US 6,157,183) further in view of Katsuyama et al (US 6,112,070).

As to claim 30, the combination of applicant's admitted prior art and Bradley fails to wherein the unwanted wave signals have frequencies of  $\pm 1.25$  MHz,  $\pm 1.98$  MHz,  $\pm 2.25$  MHz and greater than  $\pm 2.25$  MHz when the band frequency is 1.23 MHz. Katsuyama teaches the band pass filter is 1.23 Mhz (see col. 7, lines 14-27). Therefore,

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it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the teaching of Katsuyama into the system of Borg and Kobayashi in order to filter the undesired signals within a frequency ranges. The combination of Borg, Kobayashi and Katsuyama fails to teach the unwanted signals have frequencies of  $\pm 1.25$  MHZ,  $\pm 1.98$  MHZ,  $\pm 2.25$  MHZ and greater than  $\pm 2.25$  MHZ. However, it is obvious to one skill in the art to apply the higher frequency teaching into the combination of Borg, Kobayashi, and Katsuyama to filter out the frequency which is above the band pass frequency.

***Allowable Subject Matter***

Claims 10-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claim 10, the applied reference fails to teach a band rejection filter coupled to receive the transmitter output signal and filter out a prescribed band of the signal; a first analog-to-digital (A/D) converter coupled to convert an output of the band rejection filter into a digital signal; a first low pass filter coupled to the A/D converter to pass only a low frequency digital signal; a first signal processor coupled to determine whether a strength of the low frequency digital signal is increasing; a first output circuit coupled to change a sign of an output signal of the first signal processor and generate a first output signal; a second signal processor coupled to determine if the strength of the low frequency digital signal is greater than a prescribed threshold value; and a second

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output circuit coupled to logically combine the first output signal with an output of the second signal processor and generate a second output signal.

Claims 1-7, 14-23 are allowed:

Regarding to claim 1, Borg (US 5,768,689) teaches transceiver tester, Hanninen (US 5,423,071) teaches monitoring and alarm circuitry for a base station transmitting supervising signals to one or more mobile radio stations, Bradley (US 6,156,183) teaches two port handheld vector network analyzer with frequency monitor mode, Mizikovsky (US 5,255,307) teaches status indicator control for cellular mobile telephone system, Shimizu et al (US 4,989,204) teaches high throughput communication method and system for a digital mobile station when crossing a zone boundary a session, Kobayashi (US 5,442,811) teaches loop testable radio transceiver, Katsuyama et al (US 6,112,070) teaches high frequency receiving circuit for mobile communication apparatus. The teaching of these prior arts either combine or alone fails to teach wherein the RF characteristic analyzer comprises a first analyzing circuit to monitor and analyze the output signal of the transmitter; a second analyzing circuit for monitoring and analyzing the output signal of the receiver; an alarm circuit to receive analyzed data from the first and second analyzing circuits and generate an alarm signal.

Dependent claims 2-7 are allowable for the same reason.

Regarding to claim 14, Borg (US 5,768,689) teaches transceiver tester, Bradley (US 6,156,183) teaches two port handheld vector network analyzer with frequency monitor mode, Hanninen (US 5,423,071) teaches monitoring and alarm circuitry for a base station transmitting supervising signals to one or more mobile radio stations,



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Mizikovsky (US 5,255,307) teaches status indicator control for cellular mobile telephone system, Shimizu et al (US 4,989,204) teaches high throughput communication method and system for a digital mobile station when crossing a zone boundary a session, Kobayashi (US 5,442,811) teaches loop testable radio transceiver, Katsuyama et al (US 6,112,070) teaches high frequency receiving circuit for mobile communication apparatus. The teaching of these prior arts either combine or alone fails to teach the combination of input/output module, first analyzing circuit, second analyzing circuit, and alarm circuit as cited in the claim.

Dependent claims 15-23 are allowable for the same reason.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Le whose telephone number is 571-272-7892. The examiner can normally be reached on 08:00-05:00 (Mon-Fri).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Nhan Le



9-29-2005

**NGUYEN T. VO**  
**PRIMARY EXAMINER**